

We claim:

1. A prosthetic implant to at least partially support adjoining vertebrae in a spinal column, said prosthetic implant comprising a substantially spherical or ellipsoidal body and at least one expandable component.
2. The prosthetic implant as defined in claim 1, wherein at least a portion of said substantially spherical or ellipsoidal body includes said at least one expandable component.
3. The prosthetic implant as defined in claim 1, wherein at least a portion of said at least one expandable component at least partially forms a stabilizer.
4. The prosthetic implant as defined in claim 2, wherein at least a portion of said at least one expandable component at least partially forms at least one stabilizer.
5. The prosthetic implant as defined in claim 1, wherein said at least one expandable component is at least partially positioned in, on or about an outer surface of said substantially spherical or ellipsoidal body.
6. The prosthetic implant as defined in claim 1, wherein said at least one expandable component is expandable at least partially about an outer surface of said substantially spherical or ellipsoidal body.
7. The prosthetic implant as defined in claim 1, wherein said at least one expandable component is at least partially expandable about a central axis of said substantially spherical or ellipsoidal body.
8. The prosthetic implant as defined in claim 1, wherein said at least one expandable component at least partially expands into a substantial disc shape.
9. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes at least one biologically active substance, said at least one

biologically active substance coated on said at least one expandable component, contained in said at least one expandable component, or combinations thereof.

10. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes at least one biologically active substance, at least one biologically neutral substance, or combinations thereof to at least partially inhibit tissue growth, bone growth, or combinations thereof on at least a portion of said at least one  
5 expandable component.

11. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes at least one biologically active substance, at least one biologically neutral substance, or combinations thereof to at least partially promote tissue growth, bone growth, or combinations thereof on at least a portion of said at least one  
5 expandable component.

12. The prosthetic implant as defined in claim 1, wherein at least a portion of said at least one expandable component includes a substantially smooth surface.

13. The prosthetic implant as defined in claim 1, wherein at least a portion of said at least one expandable component includes a non-smooth surface.

14. The prosthetic implant as defined in claim 1, wherein said at least one expandable component has a maximum radial expanded width that is up to 300% the maximum diameter of said substantially spherical or ellipsoidal body.

15. The prosthetic implant as defined in claim 11, wherein said expanded radial width of said at least one expandable component is substantially constant.

16. The prosthetic implant as defined in claim 11, wherein said expanded radial width of said at least one expandable component is variable.

17. The prosthetic implant as defined in claim 1, wherein said at least one expandable component has a maximum expanded thickness that is less than a maximum diameter of said substantially spherical or ellipsoidal body.

18. The prosthetic implant as defined in claim 17, wherein said expanded thickness of said at least one expandable component is substantially constant.

19. The prosthetic implant as defined in claim 17, wherein said expanded thickness of said at least one expandable component is variable.

20. The prosthetic implant as defined in claim 1, wherein said at least one expandable component is expandable radially outwardly from said substantially spherical or ellipsoidal body along a substantially constant axis.

21. The prosthetic implant as defined in claim 1, wherein said at least one expandable component is expandable radially outwardly from said substantially spherical or ellipsoidal body at an angle that deviates from a substantially constant axis.

22. The prosthetic implant as defined in claim 1, wherein said at least one expandable component has an expanded thickness adjacent to said substantially spherical or ellipsoidal body that is different from an expanded thickness of said at least one expandable component at a location spaced from said substantially spherical or ellipsoidal body.

23. The prosthetic implant as defined in claim 22, wherein said at least one expandable component includes at least one tapered edge in an expanded state.

24. The prosthetic implant as defined in claim 1, wherein said at least one expandable component and said substantially spherical or ellipsoidal body are formed from at least one different material.

25. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes two hemispherical or two semi-hemispherical portions,

said at least one expandable component is portioned between said two hemispherical or two semi-hemispherical portions.

26. The prosthetic implant as defined in claim 25, wherein at least one of said two hemispherical or two semi-hemispherical portions of said substantially spherical or ellipsoidal body are formed to maintain a tension load of at least about five pounds without substantially deforming.

27. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes an elastic material at least prior to the at least one expandable component being expanded.

28. The prosthetic implant as defined in claim 25, wherein said at least one expandable component includes an elastic material at least prior to the at least one expandable component being expanded.

29. The prosthetic implant as defined in claim 27, wherein said elastic material includes an expandable pouch.

30. The prosthetic implant as defined in claim 29, wherein said expandable pouch is at least partially hardenable.

31. The prosthetic implant as defined in claim 29, wherein said expandable pouch includes at least one fluid or malleable material that is at least partially hardenable.

32. The prosthetic implant as defined in claim 27, wherein said elastic material includes an expandable wall at least partially positioned between said two hemispherical or two semi-hemispherical portions of said substantially spherical or ellipsoidal body.

33. The prosthetic implant as defined in claim 32, wherein said expandable wall at least partially retains at least one fluid or malleable material that is at least partially hardenable.

34. The prosthetic implant as defined in claim 1, wherein said expandable component includes at least one fluid or malleable material that is at least partially hardenable.

35. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes at least one cavity.

36. The prosthetic implant as defined in claim 35, wherein less than a majority of the volume of said substantially spherical or ellipsoidal body includes said at least one cavity.

37. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes an outer surface, at least a portion of said outer surface is substantially smooth.

38. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes an outer surface, at least a portion of said outer surface is substantially non-smooth.

39. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes an outer surface, said outer surface at least partially coated with a biologically active substance, a biologically neutral substance, or combinations thereof.

40. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes at least one opening.

41. The prosthetic implant as defined in claim 37, wherein said at least one opening at least partially packed with a biologically active substance, a biologically neutral substance, or combinations thereof.

42. The prosthetic implant as defined in claim 37, wherein said at least one opening including a connector that is adapted to receive an instrument to guide said prosthetic

implant between adjoining vertebrae in a spinal column, to receive a component of a stabilization system, or combinations thereof.

43. The prosthetic implant as defined in claim 37, including a cap to at least partially cover or seal said at least one opening.

44. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes a mechanical compression arrangement that is adapted to at least partially compress together at least two portions of said spherical or ellipsoidal body.

45. The prosthetic implant as defined in claim 40, wherein said mechanical compression arrangement includes a threaded member.

46. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes a memory material.

47. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes a memory material.

48. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes at least one electrical connection.

49. The prosthetic implant as defined in claim 1, wherein said at least one expandable component includes at least one electrical connection.

50. The prosthetic implant as defined in claim 1, wherein said substantially spherical or ellipsoidal body includes at least one pressure sensor.

51. The prosthetic implant as defined in claim 1, wherein said expandable component includes at least one pressure sensor.

52. A prosthetic implant to at least partially support adjoining vertebrae in a spinal column, said prosthetic implant comprising a body, said body including at least one pressure sensor, said at least one pressure sensor located on a surface of said body, located at least partially within said body, or combinations thereof.

53. A prosthetic implant to at least partially support adjoining vertebrae in a spinal column, said prosthetic implant comprising a body, said body including at least one region that is expandable to enable the surface area of said body to be increased.

54. A method for promoting arthrodesis or arthroplasty between adjacent spinal vertebrae comprising:

a. partially or completely removing a ruptured, flattened or degenerated disc located between a pair of adjacent vertebrae having opposed facing surfaces;

b. separating the pair of vertebrae;

c. preparing the opposed facing surfaces on the pair of vertebrae for a prosthetic implant; and,

d. inserting the prosthetic implant between said pair of vertebrae, said prosthetic implant comprising a substantially spherical or ellipsoidal body and at least one expandable component.

55. The method as defined in claim 54, wherein at least a portion of said substantially spherical or ellipsoidal body includes said at least one expandable component.

56. The method as defined in claim 54, wherein at least a portion of said at least one expandable component at least partially forms a stabilizer.

57. The method as defined in claim 55, wherein at least a portion of said at least one expandable component at least partially forms at least one stabilizer.

58. The method as defined in claim 54, including the step of at least partially expanding at least one expandable component.

59. The method as defined in claim 58, wherein said expandable component in an expanded state has a maximum radial width that is up to 300% the maximum diameter of said substantially spherical or ellipsoidal body.

60. The method as defined in claim 59, wherein said radial width of said at least one expandable component in said expanded state is substantially constant.

61. The method as defined in claim 59, wherein said radial width of said at least one expandable component in said expanded state is variable.

62. The method as defined in claim 58, where said expandable component in an expanded state has a maximum thickness of less than a maximum diameter of said substantially spherical or ellipsoidal body.

63. The method as defined in claim 62, wherein said thickness of said at least one expandable component in said expanded state is substantially constant.

64. The method as defined in claim 62, wherein said thickness of said at least one expandable component in said expanded state is variable.

65. The method as defined in claim 58, wherein an angle of expansion of said at least one expandable stabilizer in said expanded state is substantially constant.

66. The method as defined in claim 58, wherein an angle of expansion of said at least one expandable component in said expanded state is variable.

67. The method as defined in claim 58, wherein said step of at least partially expanding said at least one expandable component includes an insertion of material in said at least one stabilizer, said material including at least one biologically active substance, biologically neutral substance, or combinations thereof.



68. The method as defined in claim 58, wherein said step of at least partially expanding said at least one expandable component includes applying pressure to at least a portion of said at least one expandable component.

69. The method as defined in claim 58, wherein said step of at least partially expanding said at least one expandable component includes use of a memory material.

70. The method as defined in claim 58, wherein said step of at least partially expanding said at least one expandable components includes chemically reacting at least one material of the at least one expandable component.

71. The method as defined in claim 58, wherein said step of at least partially expanding said at least one expandable component includes directing an electrical current through at least a portion of said at least one expandable component.

72. The method as defined in claim 54, wherein said step of inserting includes inserting a guide instrument into and connecting said guide instrument to at least one opening in said spherical or ellipsoidal body.

73. The method as defined in claim 54, including the step of secreting from said expandable component at least one biologically active substance into a region about said prosthetic implant, said expandable component at least partially formed of, at least partially coated with, or combinations thereof with said at least one biologically active substance.

74. The method as defined in claim 54, wherein said step of at least partially preparing the two bones or bone sections for a prosthetic implant includes partially or completely removing a ruptured, flattened or degenerated disc located between a pair of adjacent vertebrae having opposed facing surfaces, preparing the opposed facing surfaces on the pair of vertebrae for a prosthetic implant, and at least partially separating the pair of vertebrae.

75. The method as defined in claims 54, including the step of at least partially expanding at least a portion of substantially spherical or ellipsoidal body.

76. The method as defined in claims 55, including the step of detecting a pressure being applied to at least one portion of the prosthetic implant.

77. A method of expanding an expandable stabilizer of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body and at least one expandable component; and,

5 b. inserting a material in said at least one expandable component until said at least one expandable component at least partially expands, said material including at least one biologically active substance, biologically neutral substance, or combinations thereof.

78. A method of expanding an expandable stabilizer of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body and at least one expandable component; and,

5 b. applying pressure to at least a portion of said at least one expandable component until said at least one expandable component at least partially expands.

79. A method of expanding an expandable stabilizer of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body and at least one expandable component; and,

5 b. causing a memory material positioned at least partially in said prosthetic implant to at least partially revert to a memory position which in turn causes said at least one expandable component to at least partially expands.

80. A method of expanding an expandable stabilizer of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body and at least one expandable component; and,

5 b. causing at least one material of said at least one expandable component to chemical react and form an expanded composition until said at least one expandable component at least partially expands.

81. A method of expanding an expandable stabilizer of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body and at least one expandable component; and,

5 b. directing an electrical current into said at least one expandable component until said at least one expandable component at least partially expands.

82. A method of expanding a body of a prosthetic implant comprising:

a. selecting a prosthetic implant having a substantially spherical or ellipsoidal body; and,

5 b. subjecting said at body to at least one mechanism to cause said body at least partially expand.

83. A method of monitoring a pressure on a prosthetic implant comprising:

a. providing a prosthetic implant having a body;

5 b. providing at least one pressure sensor, said at least one pressure sensor located on a surface of said body, located at least partially within said body, or combinations thereof; and,

c. obtaining pressure information from said pressure sensor, said information obtained prior to insertion of said prosthetic implant in a surgical site, during insertion of said prosthetic implant in a surgical site, after insertion of said prosthetic implant in a surgical site, or combinations thereof.